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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,086	10/02/2003	Yasuyuki Saito	03560.003368	7763

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NEW YORK, NY 10112

EXAMINER	
SANTIAGO, MARICELI	
ART UNIT	**PAPER NUMBER**
2879	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/676,086	SAITO ET AL.	
	Examiner	Art Unit	
	Mariceli Santiago	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/9/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The Amendment, filed on November 9, 2006, has been entered and acknowledged by the Examiner.

Cancellation of claims 1-16 has been entered.

Claims 17-21 are pending in the instant application.

Examiner's note

The following rejection is partially based on a foreign reference to Nakahar (JP 2001026883 A). A copy of a machine translation of the applied reference is hereby provided, however, an official English translation of the reference has been requested and would be submitted as soon as it is available to the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bethune et al. (US 5,424,054) in view Nakahar (JP 2001026883 A).

Regarding claims 17-19, Bethune discloses an apparatus for manufacturing carbon fibers comprising a first chamber for generating carbon fibers having disposed therein an anode (100) containing carbon and a cathode (40) facing the anode, a unit for forming an aerosol[1] of

[1] Aerosol is defined as substance consisting of very fine particles of a liquid or solid suspended in a gas.

the generated carbon fibers (inert gas is introduced to transport the carbon fiber out of the reaction zone, Column 3, lines 65-68), and a transporting tube for transporting the aerosol from the first chamber (flow tube reactor, Column 3, lines 65-68). Bethune fails to disclose the limitations of the apparatus further comprising a second chamber containing a stage on which a substrate is located, the transporting tube connecting the first and second chambers for transporting the aerosol from the first chamber to the second chamber, wherein an end of the transporting tube at the second chamber side faces the substrate, and pressure control means for providing a pressure in the first chamber greater than a pressure in the second chamber for conducting the aerosol through the transporting tube. However, in the same field of endeavor, Nakahar discloses a film formation apparatus comprising a first chamber (1) for generating ultra-fine particles (13, selected from one of metal, inorganic or organic matter, Paragraph [0002]), a second chamber (2) containing a stage on which a substrate (8) is located, a unit (9) for forming an aerosol of the generated ultra-fine particles, a transporting tube (3) connecting the first and second chambers for transporting the aerosol from the first chamber to the second chamber, wherein an end of the transporting tube (4) at the second chamber side faces the substrate, and pressure control means (12) for providing a pressure in the first chamber greater than a pressure in the second chamber for conducting the aerosol through the transporting tube (Paragraph [0021]), by use of the disclosed film formation apparatus assembly, Nakahar is able to obtain a film formation stage for depositing an ultra-fine particle film over a substrate with increased quality and high deposition rate. Nakahar further discloses a nozzle connected to an end of the transporting tube at the second chamber side, wherein the nozzle includes a heater for heating the nozzle. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the film deposition chamber stage disclosed by Nakahar in the apparatus of Bethune to further provide for a film formation stage

for depositing an ultra-fine particle film over a substrate with increased quality and high deposition rate.

The recitation for "manufacturing an electron emitting device" is considered an intended used recitation. It has been held that a recitation with respect to the manner in which a claimed element is intended to be employed does not differentiate the claimed element from a prior art structure satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ 2d 1647 (1987).

Regarding claim 20, Bethune discloses an apparatus wherein the unit for forming the aerosol is an inert gas introducing unit for introducing an inert gas to the first chamber (Column 3, lines 65-68).

Regarding claim 21, Nakahar discloses an apparatus wherein a high-speed injection is carried out of the nozzle at the second chamber side (Paragraph [0018]), however, it fails to exemplify the ejection of the aerosol from the nozzle at 10 m/s or faster. It is considered within the capabilities of one skilled in the art to optimize the velocity of ejection of the aerosol to a desired value as an obvious matter of design engineering given Nakahar's teaching of performing a high-speed ejection. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to optimize an ejection rate of the aerosol from the nozzle at a range of 10 m/s or faster as an obvious matter of design engineering based on Nakahar's teaching of a high-speed injection rate.

Response to Arguments

Applicant's arguments with respect to claims 17-21 have been considered but are moot in view of the new ground of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Mariceli Santiago
Primary Examiner
Art Unit 2879